Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

ORIGINAL
FILE

In the Matter of	)	MM Docket No. 87-268
	)	
Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service	)	

To: The Commission

COMMENTS OF THE UNIVERSITY OF NORTH CAROLINA

The University of North Carolina (UNC), through its attorneys and pursuant to Section 1.415 of the rules, hereby files its comments in response to the Commission's Second Further Notice of Proposed Rulemaking released August 14, 1992 (FCC 92-332) (the "Notice") in the above-captioned proceeding respecting implementation of Advanced Television Systems (ATV) and their impact on the existing television broadcast service. In support thereof, the following is shown:

1. UNC is the licensee of ten full service television stations which, in addition to extensive complementary translator operations, provide public television service to citizens of North Carolina.[1] As a statewide network, UNC is charged with mandate of serving over 6.6 million people (1990 U.S. Census). Fulfillment of this mandate to cover a large geographic area which is characterized in many places by mountainous terrain requires an extensive over-the-air broadcast network. In fact,

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[1] Those full-service stations are: WUNC-TV, Chapel Hill; WUND-TV, Columbia; WUNJ-TV, Wilmington; WUNE-TV, Linville; WUNF-TV, Asheville; WUNG-TV, Concord; WUNK-TV, Greenville; WUNL-TV, Winston-Salem; WUNM-TV, Jacksonville; and WUNP-TV, Roanoke Rapids, North Carolina.

while UNC after decades of development now serves much of the state, additional facilities utilizing currently vacant reserve allotments will be essential to 100 percent coverage. The Commission's ATV proposal has dramatic implications for future broadcast operations. As a noncommercial licensee of ten full service facilities, UNC is vitally concerned that the Commission adopt rules and regulations which encourage development of ATV service in a manner that does not foreclose implementation of such service by public broadcasters such as UNC. Accordingly, UNC urges the Commission to proceed with the development of ATV with due regard for the considerations set forth below.

2. The proposed timetable. The Commission has proposed a timetable which entails construction of ATV facilities in within a approximately six years of the adoption of the ATV Table of Allotments, with full conversion over a 15-year period.[2] This proposed timetable for transition to an ATV broadcast service is short and frankly unrealistic, particularly in the case of public broadcasters with multi-transmitter operations. Even many single-transmitter public television stations are unlikely to have the necessary funds needed to construct ATV transmission facilities within this proposed timetable. In fact, due to lack

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[2] See in this regard, Memorandum Opinion and Order/ Third Report and Order/Third Further Notice of Proposed Rule Making, MM Docket No. 87-268, FCC 92-438, released October 16, 1992 ("Third Further Notice").

of funds, many of these public television stations are on the air using outdated, inefficient transmission systems.[3]

3. In the case of UNC, only three out of its ten stations are capable of transmitting programming in stereo, a technology that has been available for more than a decade. Funding for transmitter replacement or other equipment updates has been very limited. Significant additional levels of funding must be secured to convert to ATV. In fact, based upon current conversion cost estimates, UNC faces additional expenditures of well over of 20 million dollars to make even a limited, low power, transition to ATV which does not include ATV production conversion costs. For a public broadcaster, this is an enormous cost. In the latter regard, it is clear that the National Telecommunications and Information Administration (NTIA), which provides substantial funding for the current replacement of station transmitting facilities, in no way could fund the overhaul of the public broadcast system based upon current funding levels. It is clear that broad new public funding, like that secured through federal legislation for replacement of the public satellite system, will be required to make the changeover to ATV.

4. The dollars simply are not available within the public broadcast system to accomplish ATV conversion within the Commission's proposed timetable. This fact, in conjunction with the Commission's "use it or lose it" approach, guarantees relega-

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[3] In this regard, it should be noted that NTIA in recent years has acknowledged the fact that the public broadcast industry is characterized by worn out and outdated equipment by altering the priorities of its Public Telecommunications Facilities Program to favor replacement of such equipment.

tion of the nation's public broadcast system to secondary status as an outmoded and obsolete delivery system. Such a result emphatically does not serve the public interest in maintaining its publicly funded noncommercial educational television system.

5. For these reasons, UNC urges the Commission to relax its proposed timetable for public broadcasters generally and for multi-transmitter network licensees in particular. Any timetable must acknowledge that insufficient funds are available to enable ATV conversion within the contemplated time frame; moreover, in the current local and national economic climate, sufficient funds are unlikely to be available except over a long period of time. Any public broadcaster should be permitted whatever time is necessary to secure the requisite funding.

6. It should be noted that the Commission has acknowledged the special needs of public broadcasters by proposing to retain ATV potential for the current vacant noncommercial reserved channels. Third Further Notice, paras. 33-35. Removing the time constraints from public broadcasters, as urged by UNC, is entirely consistent with the proposal to hold open the opportunity for ATV operation even for vacant noncommercial allotments. By contrast, imposing a use it or lose it scheme on existing public broadcasters while preserving ATV potential for vacant noncommercial channels would produce the anomalous result of precluding ATV for existing noncommercial licensees who cannot timely convert while preserving the option where no current need existed. UNC urges the Commission, consistent with its reasoned approach to preserving noncommercial spectrum, to assure that existing noncommercial licensees have every opportunity to con-

vert to ATV. Such conversion is essential to the continued participation by public broadcasters in the nation's broadcast system on a level equal to their commercial counterparts and to other program providers.[4]

7. Noncommercial reserve. UNC strongly urges that each vacant noncommercial allocation must be kept in reserve for future public ATV. In North Carolina, each allotted reserve channel is critical to fulfillment of UNC's statutory mandate of statewide coverage and some vacant channels are absolutely essential. For example, two of these allotments -- Channel *31, Lumberton and Channel *53, Rockingham, North Carolina -- will supply first service public television to a major area of the state of North Carolina. There are no alternatives to these channels; in this regard, cable television cannot deliver a UNC signal to the areas which would be served by these channels. Community pressure for activation of these facilities is enormous. There is no question but that every currently vacant noncommercial allocation in North Carolina, including Lumberton and Rockingham, would be activated if funding was available. UNC has endeavored with all due diligence, within the limits of basic funding constraints, to activate five of the eight vacant noncommercial channel allotments assigned to North Carolina. UNC has actively pursued state funding to construct these two maximum service transmission facilities. While UNC fully expects that funds will eventually be available for these facilities, the cur-

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[4] In any event, UNC supports the Commission's plan, articulated in the Third Further Notice, to review periodically the feasibility of the deadlines which it ultimately adopts.

rent funding climate in North Carolina, as in many states, makes the timing of any such funding uncertain. Four of the remaining noncommercial allotments are currently licensed to UNC as translators serving the cities of Canton, Andrews, Bryson City and Franklin, North Carolina.

8. Because of these limitations, UNC's present day state-wide NTSC broadcast system is frankly unable to provide adequate service to all of the citizens of North Carolina. If funding were available, UNC would unquestionably apply for and construct these new NTSC transmission facilities today and would certainly plan to design these facilities for future conversion to a simulcast ATV system during the proposed transition period. The loss of these channel allotments solely because of the shortage of currently available channels would have a devastating and long term impact on the many North Carolina communities not adequately served by public television.

9. UHF spectrum "packing". UNC supports the FCC proposal to assign all ATV channels to the UHF TV band. This proposal will help to provide a level playing field and insure more uniform television broadcast coverage of all licensees in all service areas. Implementation of UHF channel packing will make more efficient use of the spectrum, reduce system complexities and better control propagation variations common between television bands.

10. ATV Allotment Plan. UNC urges the Commission to insure that any proposed ATV table of allotments affords public television stations an equal chance to serve the population. The ATV allotment plan should be designed to favor maximum ATV ser-

vice area for all licensees and reserved channels after the termination of NTSC service. In this regard, it should be noted that interference to existing NTSC receivers caused by a digital ATV transmitter on adjacent or co-channel operation is significantly less than interference from NTSC to NTSC. Digital ATV interference to NTSC is seen as noise-like, similar to receiving NTSC at a weak level. The ATV allotment table should favor maximum ATV coverage with a tradeoff of a slight reduction in the present NTSC interference protection standards. UNC believes that the present NTSC service may need to tolerate some degree of potential interim interference if the end result of accepting additional interference would expand the future signal coverage of ATV service.

11. In addition, UNC has reviewed the Commission's model Allotment Table. This table does not include the vacant noncommercial allotments. Inclusion of such allotments is essential to planning of the Table. Consequently, UNC urges that any proposed table include consideration of vacant noncommercial allotments.

12. Assignment principle. The assignment principle for ATV channels must assume maximum authorized facilities (full power and maximum tower height). The ATV table should not penalize currently licensed television broadcasters by limiting a station's future ATV service on the basis of the broadcaster's current licensed facilities. In this regard, again due to funding restrictions, UNC operates many of its broadcast stations at less than FCC maximum authorized facilities. This situation in fact is commonplace in the public television industry. Many sta-

tions were built in the 1960's at operating parameters well below the maximums allowed under the rules. While many are or have been scheduled for transmitter replacement, they nonetheless continue to operate at reduced levels.

13. The new ATV service will require significantly less transmitter power than that of UNC's present NTSC service. This fact will allow many more public television broadcasters for the first time to efficiently construct and operate television transmission facilities at the maximum allowable power level. The subsequent increase in the amount of maximum service facilities would greatly improve the overall efficiency and signal coverage of the ATV service areas.

14. Pattern shaping. In UNC's view, the goal of 100 percent ATV accommodation together with the provision of interference protected service similar to the present NTSC service clearly will not be obtainable without careful engineering on a site by site basis. The use of antenna pattern shaping and the careful control of antenna elevation patterns should be mandated when necessary as a tool to insure all equitable service areas. It is common broadcast engineering practice to design television transmission systems to place the maximum peak signal at or slightly preceding the radio horizon. UNC believes that innovative antenna system design using significantly higher levels of beam-tilt and directional radiation patterns can be utilized to maximize and optimize ATV service areas and should, if feasible, be factored into the final allocation table. This type of pattern shaping would be practical to implement in the UHF band since antenna gain would be moderate. As an added benefit, more-

over, higher signal levels within a station's main service area in many cases could be achieved using increased beam tilt. In short, innovative system engineering is one of the only ways to maximize and equalize ATV service areas while controlling interference to ATV and existing NTSC facilities. Consistent with its planned policy, the Commission should aid and encourage broadcasters to cooperate fully in developing optimum ATV facilities.

15. Translators. It should be stressed that UNC's vast network of over twenty activated and authorized UHF translator facilities is essential to provide service to terrain shielded areas which, despite theoretical service predictions are in reality unserved, and are often without alternative cable service. UNC is actively pursuing completion of this network, and has activated numerous translators over the past few years. This network faces forced dismemberment should the Commission remain committed to its secondary treatment of existing translators vis a vis full service facilities. UNC urges the Commission to consider the special role that translators play in the case of statewide networks and craft rules which would protect these operations, which after all are aimed at rural areas that may never have access to ATV service due to its enormous cost.

16. Conclusion. UNC supports the Commission's effort to convert the national broadcast system to convert to ATV and is eager to be a part of the new system. At the same time, UNC realistically would be unable to participate fully in ATV conversion if it were required to meet the currently proposed timetable. Further, optimum ATV conversion by the public broadcast system well serves the public interest and will require

significant technical cooperation among all licensees. Accordingly, UNC urges the Commission to adopt rules and policies consistent with the views expressed herein.

Respectfully submitted,

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